ANNUAL REPORT

April 1981

INTEGRATED WILDLIFE INTENSIVE FORESTRY RESEARCH

Province of British Columbia

A cooperative project between the Ministries of Environment and Forests

IWIFR
ANNUAL REPORT

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Copies of this report may be obtained, depending on supply from:

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Executive Summary

This report describes briefly the purpose and progress made in the first seven months of the IWIFR (Integrated Wildlife Intensive Forest Research) program. The program is a 5 year, 1.3 million dollar, cooperative program between the Ministries of Environment and Forests, the forest industry and public conservation groups. The major challenge facing this program is the intensive integrated managment of second growth forests and their associated wildlife. To date, seven clear objectives have been defined setting the direction of study. The report outlines the administrative structure: MOE and MOF together support a steering committee (4 members) and a technical working group (8 members). A brief summary (objectives and progress) of each of eight projects currently being funded is presented. The projects and their coordinators are:

1. Roosevelt Elk in Second Growth Forests (D. Hebert)
2. Landsat Classification System for Wildlife Management and Research Planning (R. Ellis)
3. Development of Spatial Habitat Management System (R. Ellis)
4. Systems Analysis Framework (D. Eastman)
5. Effects of Intensive Management in Non-Ungulate Wildlife (R. Ellis)
6. Forest Ecosystem Classification and Mapping for Wildlife Interpretations (R. Ellis)
7. Blacktailed Deer in Second Growth Forest (D. Eastman)
8. Intensive Forestry - Wildlife Habitat Relationships (R. Ellis, W. Bourgeois).

1 INTRODUCTION

This report describes briefly the purpose and progress made in the first seven months of the IWIFR program. For more detailed project information, readers are asked to contact individual project supervisors.

In the past, forestry and wildlife management on Vancouver Island was involved primarily with old growth forests. As many of these old growth stands have been removed, managers have become concerned with "second growth" management. Intensive integrated management of second growth forests and their associated wildlife is now a major challenge facing resource managers.

Effective integration requires high quality ecological information in order to evaluate and recommend management options. The need for this information was recognized in the early 1970's and in 1980 the "Integrated Wildlife/Intensive Forest Research Program on Vancouver Island" - IWIFR - took shape as a jointly funded, 5 year, 1.3 million dollar, cooperative program between the Ministries of Environment and Forests, the forest industry and public conservation groups.

The research program is planned to proceed in three stages. In year 1, most effort was in defining a framework for the program: ranking management topics, identifying the relevant research questions in these topics, and then developing projects and approaches to answer these questions. In years 2-4, most effort will be directed to conducting the research on high priority topics. Most of the work of the program in years 4 and 5 will be towards a synthesis and summary of findings, and their relevance to future integrated management of forests and wildlife in managed stands.

2 PROGRAM GOAL

To develop and carry out an integrated and coordinated forestry-wildlife research program that provides information needed for the effective integration of intensive forest and wildlife management on Vancouver Island.

3 PROGRAM OBJECTIVES

1. To define potential research topics based on known and anticipated interactions between wildlife, their habitats and intensive forest management.

2. To determine the priorities of research topics resulting from interactions between intensive forest and wildlife management according to criteria such as the frequency and extent of problems, magnitude of impacts on wildlife and forests, costs, projected information returns, feasibility, management alternatives and public demands.

3. To develop analytical and interpretive systems to enable an integrated research program and an effective synthesis of findings.

4. To determine how deer and elk populations change in response to the effect of intensive forest management practices on their habitats.

5. To assess the potential impact of intensive silviculture on wildlife species in addition to deer and elk.

6. To assess the potential impact of wildlife on intensively managed forest stands, and on the ranching industry.

7. To assess the economic and social consequences of various management and policy options related to integrated management of managed stands and selected wildlife.

4 PROGRAM ADMINISTRATION

The cost of the IWIFR program budget is shared equally between the two Ministries.

The program is administered broadly by a steering committee and managed in detail by a technical working group (TWG) (see Figure 1).

The steering committee is composed of:

Director, Research Branch, MOF
Biologist i/c Wildlife Research, MOE
Regional Forestry Staff Manager, Vancouver, MOF
Regional Manager Fish & Wildlife, Nanaimo, MOE

The terms of reference for the Steering Committee are:

a. To review progress of the study.
b. To set deadlines and to ensure deadlines are met, as necessary.
c. To administer funds - i.e. budgeting - staffing, identify over/under expenditures, etc.
d. To provide a mechanism for resolution of problems.
e. To clarify policy matters raised by the Technical Working Group.

The Technical Working Group is co-chaired by:

Program Manager, Wildlife Habitat Research, MOF; R. Ellis
Biologist i/c Wildlife Research, MOE; D. Eastman

I.W.I.F.R. ORGANIZATION

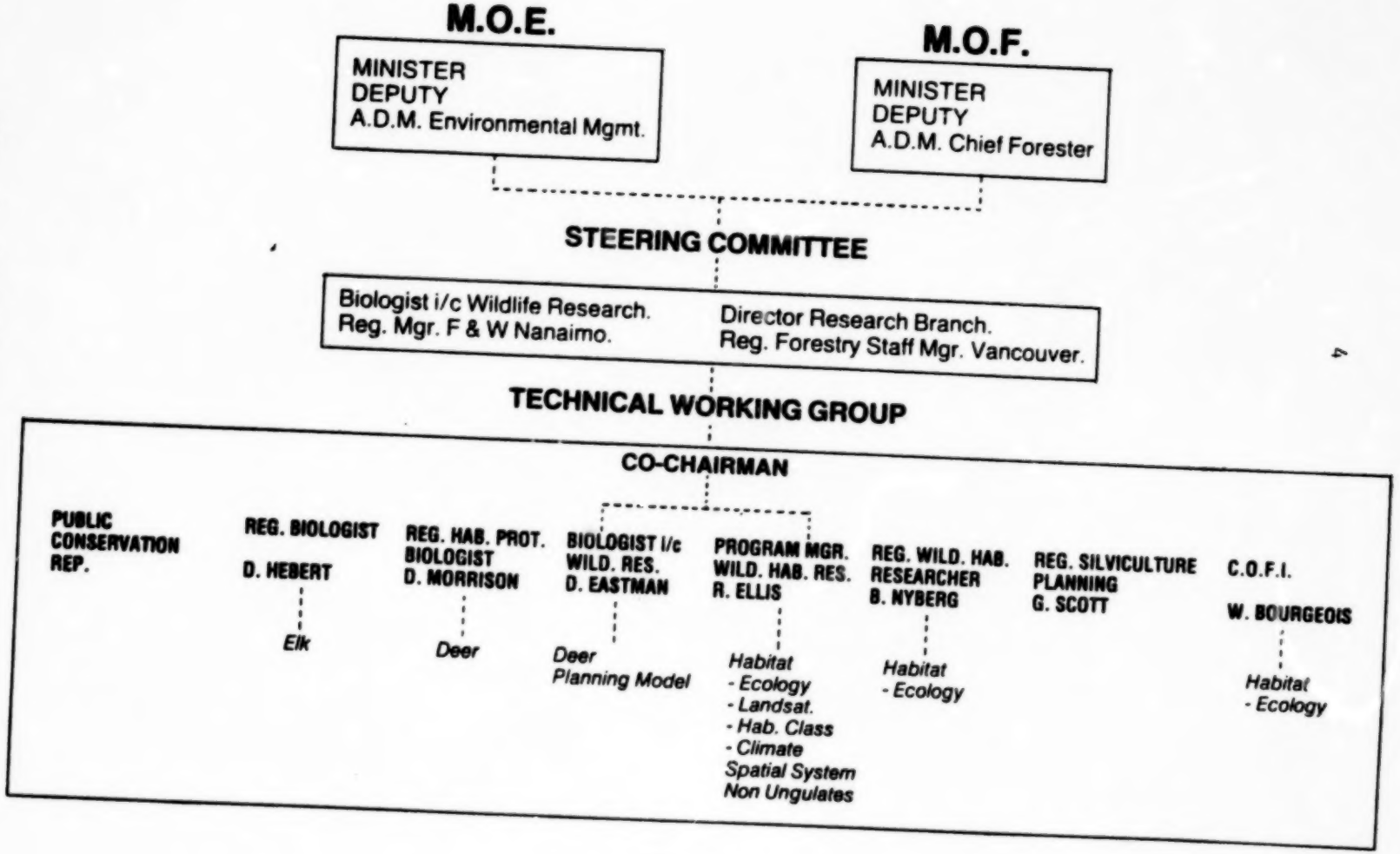

Figure 1: IWIFR Organization

The TWG has eight members: MOF: R. Ellis, B. Nyberg, G. Scott,; MOE: D. Eastman, D. Hebert, D. Morrison; Council of Forest Industries; Public Conservation.

The terms of reference of the TWG are:

a. To identify problems related to intensive forestry-wildlife interactions and the research required to aid in their resolution.
b. To develop an integrated research program.
c. To establish research priorities.
d. To coordinate and integrate research projects.
e. To allocate approved resources to implement effectively the research program.
f. To monitor and evaluate the quality and progress of the program, and communicate this information as appropriate to the Ministries and other organizations.

This committee met 10 times in 1980/81 beginning in September 1980. The main emphasis in the first year was on developing goals, objectives and priorities of work.

5 PROGRAM COMPONENTS

The following 8 projects were initiated: project leader in brackets. The relationships of the projects are shown in Figure 2.

5.1 ROOSEVELT ELK IN SECOND GROWTH FORESTS (D. HEBERT)

The objective of the elk project is to assess the response of elk habitat and populations to the various silviculture practices associated with intensive or "second growth" forest management. A problem analysis and working plan were prepared.

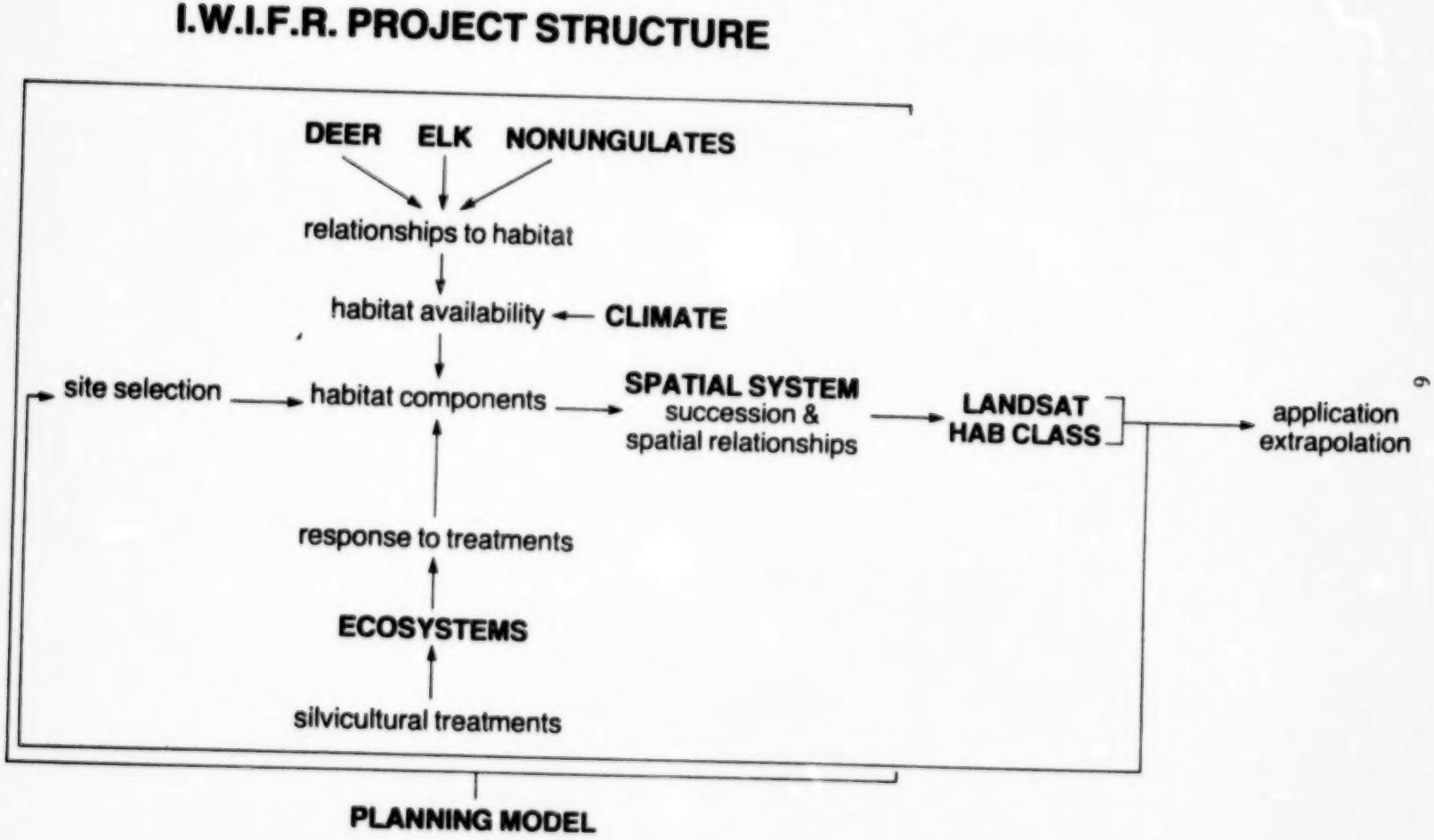

Figure 2: IWIFR Project Structure and Relationships

Preliminary field work commenced January 1981 in the Sayward Provincial Forest and adjacent forest lands (TFL #7). By March, 20 elk were captured and fitted with radio-collars. Data from these animals will provide basic information on herd identities, daily and seasonal movements and habitat utilization. Analysis of this information collected over the next year will provide the basis for subsequent design of more specific comparative and experimental activities over the remaining study period.

5.2 LANDSAT CLASSIFICATION SYSTEM FOR WILDLIFE MANAGEMENT AND RESEARCH PLANNING (R. ELLIS)

The objective of this project is to determine whether or not imagery from the Landsat satellite can provide a classification system suitable for integrated forestry-wildlife management, research planning, and the extrapolation of research findings.

During the report year, a problem analysis was prepared. Approval was given to develop a working plan for a pilot project comparing three Landsat image classification methodologies.

5.3 DEVELOPMENT OF A SPATIAL HABITAT MANAGEMENT SYSTEM (R. ELLIS)

The objective of this project is to produce a computer-based system to aid in understanding the long-term effects of intensive forest management activities on the availability and distribution of habitat for different species of wildlife. The emphasis of this project is on deer and elk habitat.

The tool would consist of computer programs that would predict the quantity and quality of available habitat at any time by using digitized land resource maps with information defining the habitat relationships of each wildlife species to each resource map, and computer programs which forecast changes in each resource map by applying information on forest growth and forest managment plans to predict future versions of each map. The programs for predicting habitat availability could then be applied to both present and future versions of the maps to evaluate the impact of forest management activities.

A three-month problem analysis for this project has been completed. This problem analysis lays the groundwork for writing the computer programs by identifying design criteria for the programs. A generalized word model of wildlife-habitat relationships has been formulated. This word model will serve as the base from which habitat selection strategies to be included in the programs will be selected, and from which the method for incorporating the selected relationships in the programs will be determined.

5.4 SYSTEMS ANALYSIS FRAMEWORK (D. EASTMAN)

The objective of this project was to develop a quantitative, logical and conceptual framework to aid coordination, integration, direction and communication in the Integrated Wildlife Intensive Forest Research Program. This framework was developed under contract to Environmental and Social Systems Analysts Ltd. Through an intensive one week workshop and related discussions with approximately 30 researchers and managers, the basic components of the system and their interrelationships were identified and described in a numerical simulation model and a companion report.

The model was defined spatially and temporally, and consists of five major submodels - understory vegetation, timber, deer, elk and predators. Each submodel was described in detail, with particular attention directed at identifying and clarifying the hypothesis implicit in the functional relationships within and between the submodels. The model produced is regarded as a first approximation, with future work in the research program directed at providing missing data and developing new concepts where these are deficient.

5.5 EFFECTS OF INTENSIVE FOREST MANAGEMENT IN NON-UNGULATE WILDLIFE (R. ELLIS)

The objective of the problem analysis is to define research questions and priorities regarding habitat, the needs of non-ungulate wildlife on Vancouver Island and the effects of intensive forest management on the animals.

The problem analysis is underway.

5.6 FOREST ECOSYSTEM CLASSIFICATION AND MAPPING FOR WILDLIFE INTERPRETATIONS (R. ELLIS)

The objective of this project is to assess the various ecological classification systems in use on Vancouver Island as to their potential regarding interpretation and further development and wildlife habitat classification tools.

The problem analysis is underway.

5.7 BLACKTAIL DEER IN SECOND GROWTH FOREST (D. EASTMAN)

The purpose of this project is similar to that of the elk study - to assess the response of deer habitat and population to the various silviculture practices associated with intensive forest management. A literature review has been completed. A project leader is being hired, whose first task will be to prepare an indepth problem analysis.

5.8 INTENSIVE FORESTRY - WILDLIFE HABITAT RELATIONSHIPS (R. ELLIS, W. BOURGEOIS)

The objective of this project is to determine the functional relationships between intensive forestry practices and wildlife habitat components on Vancouver Island. An annotated literature review is being prepared on the interactions for forest canopies, snow conditions and ungulate energetics. A project leader is being hired to develop and conduct this important activity.

6 REPORTS COMPLETED AND IN PREPARATION

Roosevelt Elk in Second Growth Forests

Janz, D., K. Brunt, J. Youds. 1981. Roosevelt Elk - Intensive Forestry Interactions: Research Needs on Vancouver Island. Problem Analysis (Draft) 37 pp.

Janz, D, K. Brunt, J. Youds. 1981. Vancouver Island Roosevelt Elk - Intensive Forestry Interactions: A Research Proposal Working Plan (Draft) 90 pp.

Landsat Classification System for Wildlife Management and Research Planning

Sadoway, K.L. 1980. Problem Analysis - Landsat Classification System for Management and Research Planning. Problem Analysis (Draft) 35 pp.

Development of a Spatial Habitat Management System

Scoullar, K. 1981. Developing a Wildlife-Habitat Management System. Problem Analysis (Draft) 53 pp.

Systems Analysis Framework

Essa Ltd. 1981. Report of the Integrated Wildlife-Intensive Forestry Research Planning Workshop (Final Report) 139 pp.